



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/814,117	03/31/2004	James E. Lavallee	EMC04-10(04035)	5149
23468 7590 12/27/2007 CHAPIN & HUANG L.L.C. WESTBOROUGH OFFICE PARK 1700 WEST PARK DRIVE WESTBOROUGH, MA 01581				
EXAMINER MCLEOD, MARSHALL M				
ART UNIT		PAPER NUMBER		
4152				
MAIL DATE		DELIVERY MODE		
12/27/2007		PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/814,117

Applicant(s)

LAVALLEE ET AL.

Examiner

MARSHALL MCLEOD

Art Unit

4152

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 31 March 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-49 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-49 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 31 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-8508)
- Paper No(s)/Mail Date _____

- 4) ☐ Interview Summary (PTO-413)
- Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

1. Claims 1-49 are pending in this action.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. **Claims 1-49 are rejected under 35 U.S.C. 102(e) as being anticipated by Heitman et al. (Patent No US 6,691,067 B1), hereinafter Heitman.**
4. With respect to claim 1, Heitman discloses displaying a physical network topology associated with the storage area network on a display screen (Column 3, lines 34-36), the physical network topology including identification of at least one switch resource that supports connectivity among host resources and storage resources in the storage area network (Figure 165, Column 3, lines 30-31); receiving a signal indicating a selected at least one managed resource associated with the storage area network (Column 5, line 20); and displaying a virtual network topology associated with the selected at least one managed resource in relation to the physical network topology (Column 3, lines 34-39; Column 45, lines 23-25).

5. With respect to claim 2, Heitman discloses overlaying the virtual network topology associated with the selected at least one managed resource on the displayed physical network topology, the method further comprising (Column 3, lines 34-39): displaying port identification information in relation to corresponding ports in the at least one switch resource to identify which ports of the at least one switch resource are associated with the virtual network topology (Column 6, lines 59-67, continued through to Column 7, lines 1-2).

6. With respect to claim 3, Heitman discloses displaying and overlaying are executed by a resource manager application of the storage area network (Column 2, lines 60-65), the resource manager application enabling a network manager to select and view at least one virtual storage area network as a portion of the physical network topology (Column 3, lines 34-44; and wherein displaying port identification information includes highlighting which ports of the at least one switch source belong to the virtual network topology (Column 7, lines 12-22).

7. With respect to claim 4, Heitman discloses wherein receiving a signal indicating a selected at least one managed resource associated with the storage area network includes receiving a selection associated with a first storage area network and a second storage area network (Column 6, lines 59-67, continued through to Column 7, lines 1-2); and wherein displaying the virtual network topology includes: simultaneously displaying, on the display screen, representations of i) the first virtual storage area network associated with a first selected managed resource, and ii) the second virtual storage area network associated with a second selected managed resource (Column 10, lines 2-16); the first virtual storage area network and the

second storage area network being uniquely illustrated as portions of the physical network topology displayed on the display screen (Column 10, lines 17-32).

8. With respect to claim 5, Heitman discloses highlighting portions of the physical network topology with a first color to identify network resources associated with the first storage area network; and highlighting portions of the physical network topology with a second color to identify network resources associated with the second storage area network (Column 10 lines 62-67, continued through to Column 11, lines 1-3).

9. With respect to claim 6, Heitman discloses displaying a virtual storage area network associated with the at least one selected managed resource on the display screen (Column 3, lines 34-44); and highlighting portions of the physical network topology to identify at least partial paths between host resources and storage resources associated with the virtual storage area network (Column 49, lines 41-51).

10. With respect to claim 7, Heitman discloses that in a first region of the display screen, displaying multiple icons representing corresponding managed resources associated with the storage area network (Column 37, lines 28-34); and in relation to the multiple icons, maintaining corresponding display regions to receive input commands from a user making a corresponding selection of the at least one managed resource (Column 37, lines 28-39).

11. With respect to claim 8, Heitman discloses enabling a user to expand a view of the hierarchy of multiple icons to facilitate a selection of the at least one managed resource associated with the storage area network (Column 37, lines 40-46).

12. With respect to claim 9, Heitman discloses that in a first region of the display screen, displaying a vertically disposed hierarchy of multiple icons representing corresponding managed resources associated with the storage area network (Column 37, lines 28-34); enabling a user to make a selection of at least one of the multiple icons to select the at least one managed resource associated with the storage area network (Column 37, lines 36-39); and in a second region of the display screen, displaying the physical network topology and the virtual network topology (Column 37, lines 33-39).

13. With respect to claim 10, Heitman discloses displaying the vertically disposed hierarchy of multiple icons includes displaying the hierarchy of icons on the left side of the display screen (Column 37, lines 28-39); and wherein displaying the virtual network topology associated with the selected at least one managed resource includes displaying the virtual network topology on a right side of the display screen, the method further comprising (Column 37, lines 28-39): in relation to the hierarchy of multiple icons on the left side of the display screen, maintaining corresponding selectable display regions to receive input commands from a user making a corresponding selection of the at least one managed resource (Column 37, lines 28-39).

14. With respect to claim 11, Heitman discloses receiving the signal indicating the selected at least one managed resource includes receiving a first signal identifying a virtual storage area network associated with the storage area network (Column 6, lines 59-67, continued through to Column 7, lines 1-2); and wherein displaying the virtual network topology includes displaying specific ports and corresponding identifications of the specific ports of the at least one switch resource associated with the virtual storage area network (Column 10, lines 7-16).

15. With respect to claim 12, Heitman discloses receiving a second signal identifying a selected zone associated with the virtual storage area network (Column 10, lines 7-16); and in response to receiving the second signal, displaying at least one host resource and at least one storage resource associated with the selected zone in relation to the virtual storage area network on the display screen (Column 10, lines 7-16).

16. With respect to claim 13, Heitman discloses that on the display screen, highlighting connection paths between the at least one host resource and the at least one switch resource as well as between the at least one switch resource and the at least one storage resource to identify network resources associated with the selected zone (Column 52, lines 64-67, continued through to Column 53, lines 1-11).

17. With respect to claim 14, Heitman discloses displaying the at least one host resource and the at least one storage resource associated with the selected zone includes: displaying an identification of host resource ports associated with the at least one host resource that physically

couple to corresponding switch resource ports of the at least one switch resource (Column 6, lines 59-67, continued though to Column 7, lines 1-2); and displaying an identification of storage resource ports of the at least one storage resource that physically couple to corresponding switch resource ports of the at least one switch resource (Column 53, lines 5-11).

18. With respect to claim 15, Heitman discloses displaying multiple icons representing corresponding selectable managed resources associated with the storage area network (Column 3, lines 34-44), at least one of the selectable managed resources representing a virtual network topology that may be selected for viewing in a second region of the display screen (Column 37, lines 33-39); and displaying the virtual storage area network topology based on a selection of at least one of the multiple icons, the virtual storage area network i) being overlayed on the physical network topology, and ii) including identified ports of the at least one switch resource that are associated with a corresponding virtual storage area network (Column 53, lines 1-11).

19. With respect to claim 16, Heitman discloses in a first region of the display screen: displaying multiple icons representing corresponding selectable managed entities associated with the storage area network, at least one of the selectable managed entities representing a virtual network topology that may be selected for viewing in a second region of the display screen; in the second region of the display screen (Column 37, lines 28-39): displaying a physical network topology associated with the storage area network, the physical network topology including at least one switch resource that supports connectivity among host resources and storage resources in the storage area network (Column 3, lines 66-67, continued through to Column 4, lines 1-8

and Figure 165, Column 3, lines 30-31); and displaying the virtual storage area network topology based on a selection of at least one of the multiple icons, the virtual storage area network i) being overlayed on the physical network topology, and ii) including identified ports of the at least one switch resource that are associated with a corresponding virtual storage area network (Column 53, lines 1-11).

20. With respect to claim 17, Heitman discloses displaying the virtual network topology includes: simultaneously displaying i) a first virtual storage area network associated with a first selected managed entity, and ii) a second virtual storage area network associated with a second selected managed entity (Column 10, lines 2-16); and the first virtual storage area network and the second storage area network being illustrated as portions of the physical network topology displayed on the display screen (Column 10, lines 17-32).

21. With respect to claim 18, Heitman discloses highlighting portions of the physical network topology to identify at least partial paths between host resources and storage resources associated with the first virtual storage area network and the second storage area network (Column 49, lines 41-51).

22. With respect to claim 19, Heitman discloses displaying the first region on the left side of the display screen, the first region including a vertically disposed hierarchy of multiple icons representing corresponding selectable and expandable managed entities associated with the storage area network (Column 37, lines 28-39); displaying the virtual network topology and

physical network topology on a left side of the display screen, the virtual network topology including specific ports and corresponding identification information of the specific ports of the at least one switch resource associated with the virtual storage area network topology (Column 37, lines 28-39); and highlighting the specific ports of the at least one switch resource to indicate that the specific ports are part of the virtual storage area network topology (Column 10, lines 7-16, i.e. a switch port).

23. With respect to claim 20, Heitman discloses displaying at least one host resource and at least one storage resource associated with the virtual storage area network topology on the display screen (Column 3, lines 39-44).

24. With respect to claim 21, Heitman discloses in the second region of the display screen, highlighting connection paths between the at least one host resource and the at least one switch resource as well as between the at least one switch resource and the at least one storage resource (Column 52, lines 64-67, continued through to Column 53, lines 1-11); displaying an identification of host resource ports associated with the at least one host resource that physically couple to corresponding switch resource ports of the at least one switch resource (Column 53, lines 1-11); and displaying an identification of storage resource ports of the at least one storage resource that physically couple to corresponding switch resource ports of the at least one switch resource (Column 53, lines 1-11).

25. With respect to claim 22, see claim 1 above.

26. With respect to claim 23, Heitman discloses displaying the virtual network topology includes displaying specific ports and corresponding identifications of the specific ports of the at least one switch resource associated with the at least one virtual network (Column 10, lines 7-16).

27. With respect to claim 24, Heitman discloses displaying at least one host resource and at least one storage resource associated with the at least one virtual network on the display screen (Column 10, lines 7-16).

28. With respect to claim 25, Heitman discloses highlighting connection paths between the at least one host resource and the at least one switch resource as well as between the at least one switch resource and the at least one storage resource (Column 52, lines 64-67, continued through to Column 53, lines 1-11).

29. With respect to claim 26, Heitman discloses displaying unique identification information of host resource ports associated with the at least one host resource that physically couple to corresponding switch resource ports of the at least one switch resource (Column 6, lines 59-67, continued through to Column 7, lines 1-2); and displaying unique identification information of storage resource ports of the at least one storage resource that physically couple to corresponding switch resource ports of the at least one switch resource (Column 53, lines 5-11).

30. With respect to claim 27, Heitman discloses a computer system for displaying management information associated with a storage area network, the computer system comprising: a processor; a memory unit that stores instructions associated with an application executed by the processor; and an interconnect coupling the processor and the memory unit, enabling the computer system to execute the application and perform operations of (Column 22, lines 1-19): displaying a physical network topology associated with the storage area network on a display screen (Column 3, lines 34-36), the physical network topology including identification of at least one switch resource that supports connectivity among host resources and storage resources in the storage area network (Column 3, lines 34-44 and Figure 165, Column 3, lines 30-31); receiving a signal indicating a selected at least one managed resource associated with the storage area network (Column 5, lines 19-29); and displaying a virtual network topology associated with the selected at least one managed resource in relation to the physical network topology (Column 3, lines 34-39).

31. With respect to claim 28, see claim 2 above.

32. With respect to claim 29, Heitman discloses displaying port identification information includes highlighting which ports of the at least one switch source belong to the virtual network topology (Column 7, lines 12-22).

33. With respect to claim 30, see claim 4 above.

Art Unit: 4152

- 34. With respect to claim 31, see claim 5 above.
- 35. With respect to claim 32, see claim 6 above.
- 36. With respect to claim 33, see claim 7 above.
- 37. With respect to claim 34, see claim 8 above.
- 38. With respect to claim 35, see claim 9 above.
- 39. With respect to claim 36, see claim 10 above.
- 40. With respect to claim 37, see claim 11 above.
- 41. With respect to claim 38, see claim 12 above.
- 42. With respect to claim 39, see claim 13 above.
- 43. With respect to claim 40, see claim 14 above.
- 44. With respect to claim 41, see claim 15 above.

45. With respect to claim 42, Heitman discloses a computer system for displaying management information associated with a storage area network, the computer system comprising: a processor; a memory unit that stores instructions associated with an application executed by the processor; and an interconnect coupling the processor and the memory unit, enabling the computer system to execute the application and perform operations of (Column 22, lines 1-19): in a first region of the display screen: displaying multiple icons representing corresponding selectable managed entities associated with the storage area network, at least one of the selectable managed entities representing a virtual network topology that may be selected for viewing in a second region of the display screen (Column 37, lines 28-39); in the second region of the display screen: displaying a physical network topology associated with the storage area network, the physical network topology including at least one switch resource that supports connectivity among host resources and storage resources in the storage area network (Column 3, lines 66-67, continued through to Column 4, lines 1-8 and Figure 165, Column 3, lines 30-31); and displaying the virtual storage area network topology based on a selection of at least one of the multiple icons, the virtual storage area network i) being overlayed on the physical network topology, and ii) including identified ports of the at least one switch resource that are associated with a corresponding virtual storage area network (Column 53, lines 1-11).

46. With respect to claim 43, see claim 17 above.

47. With respect to claim 44, see claim 18 above.

48. With respect to claim 45, see claim 19 above.

49. With respect to claim 46, see claim 20 above.

50. With respect to claim 47, see claim 21 above.

51. With respect to claim 48, Heitman discloses a computer program product including a computer-readable medium having instructions stored thereon for processing data information, such that the instructions, when carried out by a processing device, enable the processing device to perform the steps of (Column 15, lines 11-30): displaying a physical network topology associated with the storage area network on a display screen (Column 3, lines 34-36), the physical network topology including identification of at least one switch resource that supports connectivity among resources in the storage area network (Column 3, lines 34-44); receiving input from a user to display at least one virtual network associated with the storage area network (Column 5, lines 19-29); and displaying a virtual network topology associated with the at least one virtual network in relation to the physical network topology on the display screen (Column 3, lines 34-39; Column 45, lines 23-25).

52. With respect to claim 49, see claim 1 above.

Conclusion

53. The prior art made of record and not relied upon is considered pertinent to applicants disclosure.

a. Matsuzaki et al. (Publication No US 20030189929 A1) discloses a plan of a virtual storage area network system in which the server, the storage and the fiber channel switch are physically connected via the fiber channels; and display means for displaying the generated plan.

b. Tsao (Publication No US 20040215749 A1) discloses a distributed virtual SAN infrastructure includes one or more IP SAN units, the management console, the distributing control management station and the network infrastructure, wherein, the network infrastructure provides the communication links between all systems in this distributed virtual SAN.

54. Any inquiry concerning this communication or earlier communications from the examiner should be directed to MARSHALL MCLEOD whose telephone number is (571)270-3808. The examiner can normally be reached on Monday - Friday 7:30 a.m-5:00 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nabil El-Hady can be reached on (571) 272-3963. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

M.M. 12/19/2007

/Nabil El-Hady/

Supervisory Patent Examiner, Art Unit 4152